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May 27, 2008

Via Hand Delivery

Ms. LaDonna Castañuela
Office of the Chief Clerk
Texas Commission on Environmental Quality
12100 Park 35 Circle
Austin, Texas 78753

RE: Applications of TexCom Gulf Disposal, LLC for TCEQ Underground Injection Control Permit Nos. WDW410, WDW411, WDW 412 and WDW413 and Industrial Solid Waste Permit No. 87758; SOAH Docket Nos. 582-07-2673 and 2674; TCEQ Docket No. 2007-0204-WDW and 2007-0362-WDW

Dear Ms. Castañuela:

Please find enclosed an original and eleven copies of the *Lone Star Groundwater Conservation District's Reply to Applicant TexCom Gulf Disposal, LLC's Exceptions to the Administrative Law Judges' Proposal for Decision* in the above-captioned matters. By copy hereof, I certify that I have served the persons listed on the attached service list by hand delivery, first class mail, facsimile, or e-mail.

Respectfully submitted,


Michael A. Gershon

MAG:tkj
1867/01/080527

Enclosure

cc: Parties of Record
The Honorable Thomas H. Walston
The Honorable Catherine C. Egan
Ms. Kathy Turner Jones

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY
2008 MAY 27 PM 4:43
CHIEF CLERKS OFFICE

SOAH DOCKET NO. 582-07-2674
TCEQ DOCKET NO. 2007-0362-IHW

2008 MAY 27 PM 4:43

APPLICATION OF TEXCOM GULF
DISPOSAL, L.L.C. FOR TEXAS
COMMISSION ON ENVIRONMENTAL
QUALITY COMMISSION INDUSTRIAL
SOLID WASTE PERMIT NO. 87758

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BEFORE THE STATE OFFICE
OF
ADMINISTRATIVE HEARINGS

CHIEF CLERKS OFFICE

**LONE STAR GROUNDWATER CONSERVATION DISTRICT'S
REPLY TO APPLICANT TEXCOM GULF DISPOSAL, LLC'S EXCEPTIONS
TO THE ADMINISTRATIVE LAW JUDGES' PROPOSAL FOR DECISION**

TO THE HONORABLE COMMISSIONERS:

The Lone Star Groundwater Conservation District replies only to TexCom Gulf Disposal, LLC's ("TexCom's") proposed Finding of Fact No. 98, and would respectfully show as follows:

TexCom's proposed Finding of Fact No. 98 is insupportable. For convenient reference, TexCom's draft finding is provided as follows:

With respect to all other contested issues and all unrefuted issues, the Application and the remainder of the evidentiary record contain sufficient factual information regarding the surface facility's design and operation to satisfy all applicable statutory and regulatory requirements.

There is a divergence of opinion as to what regulatory standards apply to this application even among TexCom, the Executive Director, and the Executive Director's own experts, let alone the protestants and Public Interest Counsel. SOAH has recognized the lack of regulatory guidance in the rules governing this application. Additionally, there are a significant number of fact issues disputed by the protestants and Public Interest Counsel. Certainly, then, SOAH appropriately chose not to include the fact finding suggested by TexCom.

For the reasons set forth in the detailed briefing in the closing arguments of the District and other protestants, and the *Joint Motion to Certify Questions and Abate Proceeding and Alternative Motion for Summary Disposition*, the District respectfully requests that the Commission deny TexCom's request to adopt Finding of Fact No. 98.

Respectfully submitted,

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CERTIFICATE OF SERVICE

SOAH Docket No. 582-07-2674;
TCEQ Docket No. 2007-0362-IHW

I hereby certify that on this the 27th day of May, 2008, a true and correct copy of the foregoing document was provided by hand delivery, first class mail, facsimile, or e-mail to the persons listed below:

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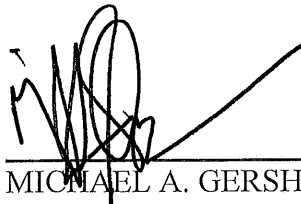
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CHIEF CLERKS OFFICE

2008 MAY 27 PM 4:44

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

1867/01/080527

SOAH DOCKET NO. 582-07-2673
TCEQ DOCKET NO. 2007-0204-WDW

2008 MAY 27 PM 4:44

APPLICATIONS OF TEXCOM GULF § BEFORE THE STATE OFFICE OF CLERKS OFFICE
DISPOSAL, L.L.C. FOR TEXAS §
COMMISSION ON ENVIRONMENTAL §
QUALITY COMMISSION § OF
UNDERGROUND INJECTION §
CONTROL PERMIT NOS. WDW410, §
WDW411, WDW412, AND WDW413 § ADMINISTRATIVE HEARINGS

**LONE STAR GROUNDWATER CONSERVATION DISTRICT'S
REPLY TO APPLICANT TEXCOM GULF DISPOSAL, LLC'S EXCEPTIONS
TO THE ADMINISTRATIVE LAW JUDGES' PROPOSAL FOR DECISION**

TO THE HONORABLE COMMISSIONERS:

The Lone Star Groundwater Conservation District, protestant in the above-referenced cause (the "District"), submits this reply to Applicant TexCom Gulf Disposal, L.L.C.'s Exceptions to the Administrative Law Judges' Proposal for Decision pursuant to section 155.59(c) of title 1, Texas Administrative Code, and would respectfully show the following:

Applicant's Exception to Finding of Fact No. 68:

The Finding of Fact No. 68, as proposed by the Administrative Law Judges (the "ALJs"), was clearly a reference to the siting criteria found at 31 Texas Administrative Code section 331.121(c)(2)(C). The suggested amendment proposed by TexCom Gulf Disposal, LLC ("TexCom") has nothing to do with what section 331.121(c)(2)(C) requires or addresses.

As a practical matter, there will be no way to determine just how inaccurate or accurate TexCom's waste fate forecasts are until, perhaps, after the completion of the operational life of the injection operation or, as is more likely the case, after its injected waste water is detected in a

USDW. Additionally, as the evidence admitted in this case shows, injected wastes are not the only threat to USDWs posed by TexCom's proposed injection operation. Formation pressure increases caused by TexCom's proposed injection activities will displace native brines that themselves could come into contact with USDWs—a risk that unfortunately, and inexcusably, remains unaccounted for given TexCom's unsubstantiated cone of influence calculation.¹ There is simply no support, either in the law or in any evidence admitted in this case that would justify TexCom's suggested edits to the ALJs' proposed finding of fact here.

The ALJs' proposed Finding of Fact No. 68 should not be amended to include TexCom's suggested revisions.

Applicant's Exception to Finding of Fact No. 115:

In the Application of TexCom Gulf Disposal, L.L.C. for Texas Commission on Environmental Quality Underground Injection Control Permit Nos. WDW410, WDW411, WDW412 and WDW413 (the "UIC Permits Application"), TexCom makes the following admission: "No water wells use Catahoula aquifers in the [area of review] although the water is likely treatable to health and aesthetic standards."² This admission was submitted by TexCom in response to one of the TCEQ's notices of deficiency of the UIC Permits Application.³

While TCEQ rules define USDW to mean, *inter alia*, a nonexempt "aquifer" or its portions that contains groundwater with fewer than 10,000 mg/l of total dissolved solids,⁴ TexCom attempted throughout the application process to sidestep this widely accepted definition

¹ District Exh. 8, p. 62.

² TexCom Ex. 23, p. 38.

³ TexCom Ex. 23, p. 1-3.

⁴ 30 TEX. ADMIN. CODE § 331.2(97).

by claiming that a USDW should nevertheless be treated as a waste "buffer zone" sufficient to accommodate section 331.121(c)(4)(A) of TCEQ's rules. In the portion of the UIC Permits Application cited above, TexCom is attempting to articulate its excuse for not treating the Catahoula aquifer as a USDW, despite the fact that the aquifer contains less than 10,000 mg/l total dissolved solids.⁵

The UIC Permits Application makes clear that the base of the lowermost USDW—the Catahoula aquifer—is at 4,088 feet below surface.⁶ Likewise, the top of what TexCom has defined as its confining zone—the Jackson Formation—is 4,088 feet.⁷ No sequences of permeable or less permeable strata separate the two.⁸ There is no competent evidence in the record of this case to support TexCom's discredited argument that the Catahoula aquifer should be considered a waste "buffer zone."

The ALJs in this Finding appear to be doing nothing but recognizing the admission that TexCom made in its UIC Permits Application regarding the potential treatability of the Catahoula aquifer water. This Finding is entirely consistent with the ALJs' recognition that the Catahoula is the lowermost USDW in the area of review,⁹ is not separated by the confining unit with any sequences of strata,¹⁰ and cannot be treated by TexCom as a waste "buffer zone."¹¹ In short, the ALJs did not accept TexCom's unsubstantiated argument that the Catahoula should be viewed as something other than a USDW that must be protected under TCEQ rules.

The ALJs' proposed Finding of Fact No. 115 should not be amended to include TexCom's

⁵ Tr. 404.

⁶ District Exh. 8, p. 20; TexCom Ex. 23, pp. 32, 36, 37, 38; TexCom Ex. 24, p. 16-17; Tr. 404.

⁷ District Exh. 8, p. 20; TexCom Ex. 23, p. 27;

⁸ District Exh. 8, p. 20; TexCom Ex. 23, pp. 27, 32, 36, 37, 38; TexCom Ex. 24, p. 16-17; Tr. 404.

⁹ Proposed Finding of Fact No. 119.

¹⁰ Proposed Finding of Fact No. 120.

¹¹ Proposed Finding of Fact No. 121.

suggested revisions.

Applicant's Exception to Finding of Fact No. 146:

TexCom claims in its exceptions to the ALJs' proposal for decision that "there is no rule requiring any particular level of conservatism" in a Class I UIC permit application like the one at issue in this case. This philosophy was central to TexCom's approach to its UIC Permits Application. TCEQ has neither defined the term "conservative" in Chapter 331 of its rules, nor has it relied upon the term in any of the provisions therein it has adopted. But TexCom's statement—that there is no rule requiring any particular level of conservatism—is not at all correct.

The TCEQ rules regulating the citing, permitting, and operation of Class I UIC wells were drafted, above all else, to protect the quality of groundwater resources in Texas.¹² To carry out this important mandate, the TCEQ rules were designed to "prevent underground injection that *may* pollute fresh water."¹³ Under these rules, a Class I UIC permit applicant bears the burden of showing, ultimately, that the proposed injection activities will not cause endangerment of USDWs.¹⁴

The District's geoscientist, Philip Grant, P.G., has built a 20-year career out of seeking—successfully—dozens upon dozens of Class I UIC permits for his clients, and has never testified in opposition to a Class I UIC permit application until he reviewed the TexCom UIC Permits Application.¹⁵ As Mr. Grant explains in his testimony, formation pressure modeling is critical in

¹² 30 Tex. Admin. Code § 331.1(a).

¹³ *Id.* (emphasis added)

¹⁴ *See id.* § 331.121(c)(4)(D).

¹⁵ District Exh. 8, pp. 3 – 5.

the endangerment analysis.¹⁶ The modeling is used to determine whether the injection reservoir can adequately accept the volumes of injectate requested in the application without endangering USDWs.¹⁷ And as he describes, a reliable formation pressure model requires the use of justifiable modeling assumptions that maximize the anticipated pressure increases from the injection operations.¹⁸ A Class I UIC permit applicant demonstrates nonendangerment of USDWs in its modeling by maximizing the anticipated pressure increases from its proposed injection operations and by appropriately addressing any identified endangerment issues that present themselves under such a scenario.¹⁹ Conservatism, in this context, is the use of these reasonable worst-case assumptions in the development of a formation pressure model that will be used to demonstrate the pressure impacts on an injection reservoir.²⁰ When an applicant has shown that USDWs are protected under these conservative assumptions, it has demonstrated nonendangerment.²¹

The permeability of an injection reservoir is one of many inputs in a formation pressure model. It is, however, one of the most important issues of this contested case. All other factors being equal, the higher the permeability of a formation, the smaller (in diameter) the cone of influence of an injection well will be.²² The permeability used by TexCom in its pressure model—500 millidarcies (mD)—is neither reasonable nor can it be considered remotely conservative.²³ Actual testing of the existing well (WDW315) tells us that approximately 69

¹⁶ District Exh. 8, pp. 6, 21-23.

¹⁷ District Exh. 8, p. 6.

¹⁸ District Exh. 8, p. 23.

¹⁹ District Exh. 8, p. 23.

²⁰ District Exh. 8, p. 22 – 23.

²¹ District Exh. 8, pp. 6, 23.

²² District Exh. 8, p. 44.

²³ District Exh. 8, pp. 29, 44 – 45; Tr. 1134.

percent of the injection reservoir that TexCom proposes to inject into has a permeability of 80.9 mD.²⁴ TexCom has admitted to this.²⁵ Despite the ALJs' wholly unsubstantiated insinuation to the contrary,²⁶ TexCom's plans to add more shots per foot to the existing perforated interval will have no effect on the permeability of this portion of the injection reservoir.²⁷ This fact was not contested by any party. Thus, even if TexCom perforates the entire Lower Cockfield (a total of 145 feet of sands that can accept waste, 100 feet of which WDW315 is already perforated into), it is extremely unlikely that the injection reservoir will have a permeability of 500 mD.²⁸

TexCom has yet to demonstrate that its 500 mD permeability assumption was calculated to safeguard the environment and human health—that is, it has yet to demonstrate nonendangerment of USDWs.²⁹ Its reliance on coring data taken from WDW315 is, in a word, weak, and it typically is presented by TexCom in a way that misrepresents what the actual testing demonstrated. What the evidence in the case demonstrates is that cores samples taken from WDW315—five (5) two inch (2") samples taken from a 14-foot section of the Lower Cockfield—had permeabilities of 836 mD, 511 mD, 485 mD, 117 mD and 6 mD.³⁰ As TexCom's own expert, Dr. Bruce Langhus, stated under oath, all that can be learned about

²⁴ TexCom Ex. 11, p. 10 (WDW315 Completion Report) (Noting that "[t]he well was perforated on December 15, 1999, with 2 shots/foot and 100 feet of perforations selected from sands within the injection interval from 6202 to 6390 feet RKB"); TexCom Ex. 11, p. 165; District Exh. 8, pp. 10 – 12, 30 – 31, 44 – 45; Tr. 1145-46.

²⁵ Tr. 347-48 (Greg Casey admitting that the 100 feet perforated interval of the Lower Cockfield has a permeability of 81 mD).

²⁶ Proposal for Decision at 35, 42.

²⁷ Tr. 1134-45 (Mr. Grant stating specifically that "there's no correlation to [adding perforations and] increasing your permeability since you're still looking at the same 1 foot sand whether it has 2 shots-per-foot in it or 4 shots-per-foot put in it."). This testimony was not rebutted by any party, and there was no evidence offered by any party supporting the idea that a formation's permeability can be manipulated by the number of shots per foot placed in an injection well.

²⁸ Tr. 1134; District Exh. 8, pp. 29, 44 – 45.

²⁹ Tr. 1134; District Exh. 8, p. 62 – 63.

³⁰ TexCom Ex. 11, p. 146.

permeability with respect to core samples is the individual permeability of each of the very small samples that were tested.³¹ "[T]he rest of the sands in the Cockfield," he added, "I really don't know about because I don't have any core there. Well, a falloff test can give you some averaged – some cumulative information over a longer time."³² Phil Grant made the same point in his testimony—that core data provides reliable permeability information for only a very distinct point within a subterranean strata, whereas falloff testing provides a much more reliable indication of the permeability of the entire tested injection interval.³³

As Mr. Grant went on to explain—without any rebuttal or other evidentiary challenge by any party—the existence of a 2-inch sand interval with a high permeability like 800 mD is not inconsistent with an average permeability of 81 mD of the overall injection interval.³⁴ Though the Lower Cockfield may be made up of discreet pockets of relatively high permeable sands interlaced with pockets of relatively low permeable sands (a fact that is evidenced by the variations in coring data derived from WDW315³⁵), the formation as a whole will accept injected wastewater as an average over a given period of time.³⁶ The higher permeability sands might accept the flow first, but because these discreet strata are relatively thin, they will also pressure up relatively quickly, building resistance against additional flow intake, and diverting injectate off into sands within the perforated interval that have lower permeabilities.³⁷ Over a period of time—be it the time during which a falloff test is conducted, or during which wastewater is injected as an operational function—this process results in the averaging of fluid flow throughout

³¹ Tr. 427-28.

³² Tr. 428.

³³ Tr. 427-28.

³⁴ Tr. 1146.

³⁵ Tr. 1133-33.

³⁶ Tr. 1146, 1148-49.

³⁷ Tr. 1148.

the perforated interval, so that a true average permeability of the perforated interval develops.³⁸ Since almost 70 percent of the proposed injection reservoir has a known permeability of 81 mD,³⁹ the remaining 30 percent of the available sand must have an inordinately high permeability to arrive at TexCom's unfounded 500 mD number.⁴⁰ The evidence in this case overwhelmingly demonstrates that this scenario is "extremely unlikely."⁴¹

And despite what TexCom says about support for its position in literature, it was unable to produce one single publication that suggests such a permeability for the Lower Cockfield should be expected.⁴²

Instead, the overwhelming amount of evidence produced in this case shows that the most appropriate, reasonable assumption that TexCom should have made regarding the permeability of the injection reservoir—the Lower Cockfield—was 80.9 mD (rounded to 81 mD).⁴³ The ALJs have recognized with their proposed Finding of Fact No. 146 (a) that TexCom could not demonstrate that its modeling assumptions were justified, and (b) that the known permeability of 81 mD should have been used in its model in order to demonstrate nonendangerment of USDWs.

The ALJs' proposed Finding of Fact No. 146 should not be amended to include TexCom's suggested revisions.

Applicant's Exception to Finding of Fact No. 147:

The ALJs' proposed Finding here accurately describes the standard by which TexCom

³⁸ Tr. 1148-49.

³⁹ Tr. 347-48 (Casey admission that current perforated interval is 81 mD); Tr. 1128.

⁴⁰ Tr. 1130-31, 1145-46.

⁴¹ Tr. 1134.

⁴² District Closing Argument at 39.

⁴³ District's Reply to Closing Arguments, Sec. II. C. (1)(b).

was required to base its cone of influence calculation. The proposed Finding, as stated by the ALJs, makes clear that the cone of influence is calculated to be the farthest extent within the injection reservoir that formation pressure increases attributable to the proposed injection operation will reach 421 psi or greater over the life of the well. The 421 psi or greater measure is considered dispositive because it would take a 421 psi increase above the native formation pressures to displace a mud plug in a properly cased abandoned oil or gas well.⁴⁴

A formation pressure model is designed, when developed properly, to calculate the farthest distance from the injection wellbore that this cone of endangering pressure can be expected over the life of the well.⁴⁵ To assure nonendangerment, all wells within this cone of influence must be accounted for and must be shown (a) to not penetrate into the injection reservoir, or (b) to each be properly (i.e., cement) plugged.⁴⁶ There are *at least* 18 wells within the cone of influence of TexCom's proposed injection operations that have no total depth or plugging records associated with them.⁴⁷ And there is at least one well within the cone of influence drilled to a depth of 12,492 feet.⁴⁸ To demonstrate nonendangerment, TexCom should have produced records indicating that each well was properly plugged or that otherwise do not penetrate into the Lower Cockfield.⁴⁹ Alternatively, TexCom should have assumed that each were plugged only with drilling mud,⁵⁰ and it should have submitted a corrective action plan for

⁴⁴ District Exh. 8, p. 36; District Exh. 11, p. 28 of 32 (TCEQ-0623 UIC Class I Injection Well Application, Rev. Sept. 20, 2005).

⁴⁵ District Exh. 8, p. 23.

⁴⁶ 30 TEX. ADMIN. CODE §§ 331.121(a)(2)(A-B), .121(c)(4)(D).

⁴⁷ District Exh. 8, p. 60.

⁴⁸ District Exh. 8, pp. 59-60.

⁴⁹ 30 TEX. ADMIN. CODE §§ 331.121(a)(2)(A-B), .121(c)(4)(D)

⁵⁰ District Exh. 11, p. 28 of 31 (TCEQ-0623 UIC Class I Injection Well Application, Rev. Sept. 20, 2005).

each well.⁵¹

With respect to each of these 19 wells, TexCom produced no data demonstrating that any were plugged with anything other than drilling mud.⁵² Under TCEQ rules, it has not demonstrated nonendangerment of USDWs.⁵³ To the contrary, when applying what the ALJs determined were the appropriate permeability assumptions and what they considered to be the appropriate transmissivity assumptions of the EW-4400-S fault⁵⁴ in calculating the cone of influence, the result makes clear that TexCom's proposed injection activities could endanger USDWs.⁵⁵

The ALJs' proposed Finding of Fact No. 147 should not be amended to include TexCom's suggested revisions.

Applicant's Exception to Finding of Fact No. 154:

The overwhelming weight of evidence in this case, much of it coming straight out of the UIC Permits Application itself, demonstrates that the EW-4400-S fault should have been modeled as a barrier to formation pressuring caused by TexCom's proposed injection operations. TexCom's own expert witness, Dr. Langhus, described how the types of shales present throughout the Cockfield Formation have a muddy, or play dough-like, consistency,⁵⁶ and at a fault with as significant of a throw as EW-4400-S, these shales have a tendency to smear along

⁵¹ 30 TEX. ADMIN. CODE § 331.44(b)(1).

⁵² District Exh. 8, p. 60 – 61.

⁵³ District Exh. 8, pp. 61 – 63; 30 TEX. ADMIN. CODE §§ 331.1(a), .121(c)(4)(D).

⁵⁴ Finding of Fact No. 154.

⁵⁵ District Exh. 8, pp. 62 – 63; *cf.* 30 TEX. ADMIN. CODE § 331.1(a), .121(c)(4)(D).

⁵⁶ Tr. 418-19.

the fault plane instead of breaking.⁵⁷ This shale smearing, we are told by Dr. Langhus, can create a pressure seal that inhibits pressure dissipation from one side of the fault to the other, when the formation contains as little as 25 percent shales.⁵⁸ Of course, Dr. Langhus' testimony on this point follows Mr. Grant's testimony on the same issue.⁵⁹ The Lower and Middle Cockfield are made up with as much as 50 percent of the types of shales that both Dr. Langhus and Mr. Grant agree are likely to create this pressure sealing effect at EW-4400-S.⁶⁰

In addition to shale smearing, a pressure seal can be created by a sand and shale juxtaposition across a fault.⁶¹ We know from Mr. Grant that, based on his review of the TexCom UIC Permits Application and based on his knowledge of the Gulf Coast tertiary sands, both shale smearing and sand and shale juxtaposition are likely present at EW-4400-S in the Lower and Middle Cockfield formations.⁶² District Exhibits 12 and 13, when reviewed together, provide a powerful illustration of the substantial impact that the pressure barrier created by EW-4400-S can be expected to have on the cone of influence of TexCom's proposed injection activities.⁶³ The models show how, when all other factors are equal, the presence of a pressure barrier like EW-4400-S will have a dramatic impact on the reach of the cone of influence.

Without question, TexCom's treatment of the fault as transmissive in its pressure modeling is not a conservative assumption that can be expected to adequately safeguard against endangerment of USDWs and fresh water aquifers. The ALJs' Finding in this regard is a

⁵⁷ Tr. 419, 1078-79

⁵⁸ Tr. 407, 419.

⁵⁹ District Exh. 8, pp. 48, 49; Tr. 1078-79.

⁶⁰ Tr. 419, 1078.

⁶¹ District. Exh. 8, pp. 48, 49; Tr. 1078-79.

⁶² District Exh. 8, pp. 48, 49; Tr. 1078-79.

⁶³ District Exh. 8, pp. 47-48; District Exh. 12; *cf.* District Exh. 13 (indicating that all other factors being equal, the nontransmissive nature of EW-4400-S alone will drastically expand the cone of influence of TexCom's proposed injection activities).

recognition of (a) the absence of any meaningful evidence to support TexCom's "transmissive" hypothesis, and (b) the overwhelming amount of credible evidence that suggests TexCom should have considered the EW-4400-S fault to act as a pressure boundary if it was to demonstrate nonendangerment of USDWs in its UIC Permits Application.

The ALJs' proposed Finding of Fact No. 154 should not be amended to include TexCom's suggested revisions.

Applicant's Exception to Finding of Fact No. 158:

The value used for thickness in a formation pressure model is as important a value as permeability when calculating a cone of influence.⁶⁴ Thickness, in this context, is a vertical measure of the length of casing in the injection well that has been perforated to provide a pathway for wastewater to enter specific sands through the perforations and into the injection interval.⁶⁵ The value itself reflects the total thickness of sand in the injection interval that will accept wastewater from injection operations.⁶⁶ All other conditions being equal, by increasing the thickness value in a formation pressure model, the size of the resulting cone of influence will be reduced.⁶⁷

TexCom proposes to inject wastes into the Lower Cockfield formation, which we understand from site-specific data collected from WDW315 to begin at a depth of 6,045 feet and extend down to 6,390 feet.⁶⁸ The Lower Cockfield consists largely of shale with thin sands

⁶⁴ District Exh. 8, p. 34-35.

⁶⁵ District Exh. 8, p. 33.

⁶⁶ District Exh. 8, p. 34.

⁶⁷ District Exh. 8, p. 36.

⁶⁸ District Exh. 8, 19; Tr. 178-79, 237-38; TexCom Ex. 23, pp. 39, 46; TexCom Ex. 24, p. 1.

interbedded throughout.⁶⁹ TexCom describes it as "345 feet of shales and thin sands,"⁷⁰ as "shaley,"⁷¹ and as having "the least sand and the lowest quality sands in the Cockfield [Formation]."⁷² The thickest single segment of sand in the entire 345-foot thick formation is only seven (7) feet thin, with most other sand sequences being "much thinner."⁷³ Out of the 345 feet of Lower Cockfield, only 145 feet of it consists of sands that are available to accept injected wastes.⁷⁴

TexCom did not assume an injection thickness of just 145 feet in its formation pressure modeling. Instead, it calculated its cone of influence using 145 feet of thickness *only up to* the point where the Lower Cockfield intersects with the EW-4400-S fault.⁷⁵ From this point of intersection, TexCom assumed (incorrectly, as the ALJs concluded in their Finding of Fact No. 154) that the injection pressures would pass through the EW-4400-S fault and empty into both the Lower Cockfield (145 feet of net sands available)⁷⁶ and the Middle Cockfield (256 feet of net sands available)⁷⁷ for a total formation thickness of 401 feet from that point out to the south.⁷⁸ By describing EW-4400-S as transmissive to injection pressures—despite the great weight of evidence demonstrating the contrary—TexCom manufactured a more favorable pressure model than what would have been shown using the parameters that the ALJs determined were

⁶⁹ District Exh. 8, pp. 16-17; Tr. 1078-79; TexCom Ex. 57, p. 15.

⁷⁰ TexCom Ex. 23, p. 51.

⁷¹ TexCom Ex. 57, p. 18; District Exh. 8, pp. 16-17.

⁷² TexCom Ex. 23, p. 38.

⁷³ TexCom Ex. 23, pp. 29, 51.

⁷⁴ Tr. 1130-31; TexCom Ex. 21, p. 30; TexCom Exh. 23, p. 39.

⁷⁵ District Exh. 8, p. 34; TexCom Ex. 21, p. 30-31.

⁷⁶ TexCom Ex. 21, pp. 30-31.

⁷⁷ TexCom Ex. 21, pp. 30-31.

⁷⁸ District Exh. 8, p. 36; TexCom Ex. 21, pp. 33, 34; TexCom Ex. 23, p. 38.

appropriate.⁷⁹ The end result was a pressure model that conceals potential USDW endangerment problems.⁸⁰

In the hearing, Mr. Casey described his use of 145 feet as a thickness value as being a conservative approach because, he suggests, there are somewhere around 345 feet of available sands to accept injectate in the Lower Cockfield.⁸¹ Given the tremendous amount of evidence in TexCom's own UIC Permits Application that indicate that the Lower Cockfield consists of only 145 feet of available sands,⁸² with the balance made up of impermeable shales,⁸³ this testimony appears at odds with even his own work product.⁸⁴ He admits as much when, in live testimony, he acknowledged that the falloff test conducted on WDW315 in 1999 showed no signs of the injected materials traveling to other parts of the Lower Cockfield.⁸⁵ If the materials did migrate into all 345 feet of the Lower Cockfield, and if these additional areas of the formation had the high permeabilities that TexCom claims exists, then according to Mr. Casey the falloff testing of WDW315 would have indicated this.⁸⁶ It comes as no surprise that the results show the existence of no such free-flow migration or areas of high permeability within the tested portions of the Lower Cockfield.⁸⁷

The ALJs' proposed Finding of Fact No. 158 should not be amended to include TexCom's suggested revisions.

⁷⁹ Finding of Fact No. 146; Finding of Fact No. 154; District Exh. 8, pp. 31, 36; District Exh. 12; District Exh. 13.

⁸⁰ District Exh. 8, p. 36.

⁸¹ Tr. 320.

⁸² TexCom Ex. 23, pp. 39, 51.

⁸³ Tr. 418 - 19, 1078-79;

⁸⁴ TexCom Ex. 20, pp. 151, 154; TexCom Ex. 21, pp. 20, 29, 30, 34; TexCom Ex. 23, pp. 29, 39.

⁸⁵ Tr. 346-48.

⁸⁶ Tr. 360-61 (Mr. Casey discussing how a falloff test would indicate the presence of areas of higher permeabilities in a formation).

⁸⁷ Tr. 362 (Mr. Casey admitting that the falloff test conducted on WDW315 shows the presence of "no areas of higher permeability.")

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CERTIFICATE OF SERVICE

SOAH Docket No. 582-07-2673;
TCEQ Docket No. 2007-0204-WDW

I hereby certify that on this the 27th day of May, 2008, a true and correct copy of the foregoing document was provided by hand delivery, first class mail, facsimile, or e-mail to the persons listed below:

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